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illustrate the absorbing power of a stream of fluid, whether issuing from the open orifice of a reservoir, or flowing through rigid tubes. The effects of this power are seen in the position of the fluid contained in a vertical tube open at both ends, placed within the reservoir, and of which one end is brought within the influence of the effluent stream; and also, when one end of a bent tube is brought into the stream issuing from the open orifice of a reservoir, while the other end is immersed in a coloured fluid. The author accounts for the intermitting or pulsatory character of the jet issuing from an open horizontal pipe, having a small hole on the upper side, by the introduction of air, which, accumulating from time to time, forms a bubble, which when it has attained a certain size, occasions an obstruction to the free passage of the liquid, until the obstacle is overcome by increased pressure from behind, and the jet then resumes its former velocity. These changes occurring periodically, give rise to the appearance of pulsation which is observed in these circumstances.

May 23, 1844.

ROBERT BROWN, Esq., V.P., in the Chair.

1. "Meteorological Register kept at the Master Attendant's Office, Trincomalee, between the 1st of September, 1843, and the 29th of February, 1844." By Joseph Higgs, Master Attendant. Communicated by the Lords Commissioners of the Admiralty.

2. "On the supposed Properties of the Electric and Magnetic Fluids." By W. F. Stevenson, Esq., F.R.S.

The author is of opinion that electricity is a single undecomposable fluid, and that the distinction usually made into vitreous and resinous, or positive and negative electricities, is derived altogether from the direction of its motion and the circumstances under which it is presented; and, according as it is found on a conducting or non-conducting body, it is positive in the former case and negative in the latter. The quality of the electricity is, according to the author, modified by the form of the conducting body, which, when globular, opposes its escape; but, when pointed, facilitates its passage in a current. He considers the magnetic fluid as obeying the same law as the electric fluid, that is, moving in a current, which when aided, and not interrupted, will always be found positive, or having a north pole, at that end of the conductor or magnet where the fluid is escaping; and negative, or with a southern polarity, at the opposite extremity.

3. "De l'Education des Animaux; faisant suite à l'ouvrage publié en 1842, et qui a pour titre *Essai sur l'Education des Animaux*." Par St. Léonard de Lille, Membre de diverses Sociétés scientifiques, et de l'Athénée des Arts de Paris, et son Employé des Finances. Première partie de l'Institut et de l'Intelligence, Education et Civilisation. Communicated by J. F. Daniell, Esq., For. Sec. R.S.

The present paper purports to be the sequel of a work, already published by the author, on the subject of the education of animals. It is the first part only of the paper which is here presented, and contains preliminary observations on the nature of the inquiries which the author proposes to enter into in the subsequent parts. It is divided into three chapters; the first comprising some general remarks on the objects to be attained in the education of animals, and some criticisms on the opinions of preceding writers relating to the subject; the second treating principally of Instinct and its characteristic features, as contrasted with Intelligence and Reason; and the third entering into various metaphysical disquisitions on the nature and peculiar sphere of action of the different intellectual faculties, both those which are common to man and the lower animals, and those which are peculiar to the former.

June 13, 1844.

The MARQUIS OF NORTHAMPTON, President, in the Chair.

1. "On the Action of the Sun's Rays on Lithic Acid." By John Davy, M.D., F.R.S. Lond. and Edinb.

The author, after adverting to the composition of guano, and remarking that its nitrogenous part differs from the urine of the sea-fowl, from which it is derived, chiefly in containing little or no lithate of ammonia, but a large proportion of the oxalate, describes an experiment made for the purpose of determining whether the oxalic acid existing in guano may not be formed from the lithic acid of the urine, in consequence of the operation of the sun's rays. The result of a comparative trial made with the urine of the white-headed Sea-Eagle, in one instance kept in darkness, in the other exposed to bright sunshine for many successive days, afforded an answer in the affirmative. Whilst the urine of the Sea-Eagle, consisting chiefly of lithate of ammonia, kept in the dark, underwent no change, that exposed to light was materially changed, most of the lithate of ammonia had disappeared, its place was supplied by oxalate of ammonia, the peculiar odour of guano was acquired, and in part its brownish hue.

From considering the composition of the lithic and oxalic acids, the author infers, that in the conversion of the one into the other, oxygen is absorbed; and, in confirmation, he mentions that although no change takes place when moist lithate of ammonia is exposed alone to a temperature of about 212° , it is otherwise if so treated when mixed with black oxide of manganese, in which case oxalate of ammonia is formed, and also some brown colouring matter, not unlike that of guano; and this colouring matter, he supposes, may appropriate to itself the excess of carbon and hydrogen, that is, such proportions of these substances in the lithic acid as are more than those required to form oxalic acid and ammonia.